STUDIES IN THE MALACHIIDAE—VI

By M. Y. Marshall[1]

The purpose of the present paper is to present descriptions of new species and subspecies of *Malachiidae* which have come to light during the past year in the course of identifying material in that family for several museums and colleges, as well as observations on already known species which I hope will contribute to the better understanding of those species. Most of the material on which the paper is based has been referred to me by the following institutions: U. S. National Museum, American Museum of Natural History, University of Arizona, University of Arkansas, University of California, University of Idaho, University of Utah, Ohio State University and Cornell University.

COLLOPS Erichson

Collops bipunctatus (Say)

(Figure 1)

In 1951, and again in 1952, I noted the occurrence of a southern form of this species in the neighborhood of Mexico City but refrained from describing it as a subspecies due to the large area of overlap between this and the northern form and the lack of information concerning the species in the area between Durango City and Mexico City. A series of 85 specimens, collected by C. and P. Vaurie of the David Rockefeller Mexican Expedition of 1953 in the states of Zacatecas, Aguascalientes and Guanajuato, covers the greater part of the latter area and further consideration of the subject convinces me that the southern form is deserving of subspecific rank.

Collops bipunctatus australis, new subspecies

(Figure 2)

Male. Differs from the nominate subspecies in the coloration of pronotum, legs and antennae. The two thoracic spots, which in the nominate subspecies are small and round and at times are reduced to mere points, are markedly dilated, so as to cover almost one-half of the pronotal surface. The spots are roughly triangular, with the median edges parallel and separated by a narrow median red line. They almost attain the anterior thoracic margin and extend about two-thirds of the distance from the center to the basal and lateral margins, the lateral edges of the spots roughly paralleling the lateral thoracic margins. The legs and antennae are entirely black, except the first antennal segment and the proximal tip and upper surface of the second segment, the first segment with a narrow dorsal piceous streak. The frontal pale area is reduced to a small triangular spot at the center of the frontal margin.

Female. Similar to the male, except for the usual secondary sexual characters in the antennae and terminal sternite. Length, male and female, 7.0 mm.

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[1]Murfreesboro, Tennessee.

Holotype, male and allotype, female, "Mexico, D. F., 3 Sept., 1928. G. Lassmann, collector," in the author's collection. 13 paratypes, one "15 mi. e. Aguacalientes, Aguas, Mex., VIII-12-53" and 12 "San Miguel Allende, Guan., Mex. VIII-12- 53," all collected by C. and P. Vaurie. Paratypes in the author's collection and in that of the American Museum of Natural History.

These paratypes, including the series of 45 specimens from the Distrito Federal, show a slight variation in the size of the thoracic spots, which is the main distinguishing character of the subspecies, but none which would give rise to any doubt as to whether the specimen should be assigned to the northern or the southern subspecies. The new subspecies thus easily conforms to the 75 percent rule; in fact, it would still conform if the 75 percent were raised to 100 percent.

The hybrid population in the zone of overlap, as described by me in 1952, contains a mixture of intermediate forms and specimens which could be referred to either one or the other of the two subspecies. Thus the specimens from Zacatecas, as well as the large series perviously noted from Chihuahua and Durango (1952), should be labeled *Collops punctatus punctatus* × *australis*. The zone of overlap or hybridization is quite extensive, but no more so than the similar zone between *Cicindela flavopunctata flavopunctata* and *Cicindela flavopunctata rectilatera*, as illustrated by M. Cazier in his Review of the Mexican Species of Cicindela (1954), p. 276. Lastly, it is noted that the variation in question is not continuous as one progresses from the north toward the south, i.e., a cline, but is discontinuous or abrupt at the limits of the zone of hybridization, i.e., northern Chihuahua and southern Zacatecas.

Collops arizonensis Marshall

Three females, which obviously belong to this species, from Ruby, Arizona, have the prothorax entirely rufous. Typical specimens, in which the prothorax is black with the lateral margins rufous, have also been taken in the Huachucha Mts., Arizona. The specimens from Ruby closely resemble females of *C. tricolor* Say, but in this species the elytra are more finely punctured and the lateral and sutural marginal beads of the elytra are more or less rufous.

ATTALUSINUS Leng

C. W. Leng, in 1918, established this genus, in the following short paragraph.

"*Attalusinus submarginatus* Lec., which was not recognized when Dr. Horn's revision was written (1872), has been found by Dr. Schwarz at Catalina Springs, Arizona. It is, however, not an *Attalus*, but represents a new genus, nearer to *Chaetocoelus* than to *Attalus*, which may be called *Attalusinus*."

In 1948, pp. 122 and 124, I discussed this genus, giving the generic characters which I had taken from specimens in the U. S. National Museum, and stated that the National Museum contained eight specimens belonging to the genus, including the series of five collected by Dr. Schwarz at Catalina Springs, none of which were believed by Mr. Barber to belong to *submarginatus* Lec. In 1951, p. 86, I recorded from Yuma, Arizona a female of *submarginatus,* the only other specimen of the species known at that time, which I had been able to compare with Leconte's unique female type in the Museum of Comparative Zoology. Now, through the kindness of Drs. Chapin and Blackwelder formerly of the National Museum, I am enabled to study the above mentioned material from that institution.

The eight specimens included undoubtedly represent two, and possibly three, distinct species. Unfortunately, complete examples of both sexes are not present from any one of the three localities represented, there being one male from Panamint Valley, California, two males from Nuevo Leon, Mexico, three females and two incomplete males from Catalina Springs, Arizona. One of these incomplete males has only the antennae missing; the other is minus the entire head and prothorax. The male from Panamint Valley I believe to belong to Leconte's species, *A. submarginatus,* and propose to describe it as the allotype of that species, missing for the past 103 years; the two males from Nuevo Leon appear to be conspecific with the Catalina Springs specimens, which are unquestionably distinct from *A. submarginatus.* I would like to have chosen one of the males from Catalina Springs as the holotype of the new species, due to the fact that both sexes are represented in the material from that locality, but have chosen instead one of the males from Nuevo Leon, since it is a complete specimen. The five specimens from Catalina Springs are therefore designated as paratypes. If additional material should prove them to be specifically distinct from the Nuevo Leon population, the error could easily be corrected. Material in this genus is so scarce, however, that this may not happen for another 103 years.

For the convenience of my readers, I give here a translation of Leconte's short description of *Ebaeus submarginatus* (1852), which is not easily obtainable.

"Elongate, aeneous black, thinly pubescent, thorax slightly alutaceous, not transverse, narrowed toward the base, obsoletely rufescent, elytra scarcely dilated, depressed, obsoletely rugose, shorter than the abdomen. Length .06. One female specimen, Colorado River, California. The antennae and tibiae are testaceous at base."

Attalusinus submarginatus (Leconte)
(Figure 4)

Male. Elongate oblong, parallel, the elytra slightly widened posteriorly; color piceotesaceous, somewhat paler than the female, slightly aeneous; pronotum, anterior portion of frons, genae, palpi, tibiae, tarsi and first three or four antennal segments testaceous, the pronotal disc clouded with piceous. *Head* short, broad, 1.5 times wider than long, the eyes small but prominent; head barely wider than prothorax, the entire front moderately excavated anterior to the middle of the eyes and more shallowly in a semicircle extending from the interocular line to the occiput, a small, shining, blunt tubercle at the middle of the interocular line. (Fig. 4) *Antennae* long, almost reaching the tips of the eyltra, feebly serrate from the fourth segment, the pubescence long and conspicuous, first segment slightly enlarged, second small, spherical, third and fourth cylindrical, about as long as the first, segments 5 to 10 slightly longer, subequal, eleventh slender, 1.5 times as long as tenth, cylindrical. *Prothorax* 1.5 times wider than long, strongly narrowed behind, scarcely sinuate in front of the posterior angles, basal margin strongly reflexed, surface finely alutaceous, no pubescence visible. Head and elytra are minutely, sparsely punctulate, with short, fine pale pubescence. *Elytra* finely rugulose, 2.15 times the length of the prothorax, leaving three tergites exposed; apices evenly and separately rounded, not at all truncate, apex 1.2 times wider than base. *Ventral surface* shining, finely and sparsely punctulate and pubescent. The protarsi in the type are not visible. Length 1.5 mm.

Allotype, male, "Panamint Vy. April 91 K., A. Koebele, collector," in the U. S. National Museum. No parallotypes.

Attalusinus mexicanus, new species
(Figure 3)

Male. Elongate, parallel, the elytra not perceptibly widened posteriorly. Color testaceous, anterior half of frons, genae and basal margin of pronotum ivory white, the elytra paler toward the apices and lateral margins. *Head* short, broad, 1.3 times wider than prothorax, a small, rounded tubercle, piceous in color, at center of interocular line. Behind this is a semicircular depression, extending on to the occiput and joining at either end with a lateral depression which reaches the orbit on either side. The portion of the front anterior to the tubercle forms a raised, pentagonal area, which contains a deep, rounded depression immediately anterior to the tubercle; (Fig. 3), surface shining, punctuation and pubescence sparse and extremely fine. *Antennae* moderately long, attaining terminal third of elytra; pubescence fine, not conspicuous; filiform, first segment moderately enlarged, second small, spherical, third and succeeding segments about as long as first, eleventh slightly longer; third segment spoon shaped, with entire anterior face flattened and excavated. *Prothorax* 1.1 times wider than long, strongly narrowed behind, rather strongly sinuate in front of posterior angles; base strongly reflexed; surface shining and finely alutaceous; punctuation and pubescence as on the head. *Elytra* finely rugulose, 2.15 times the length of prothorax, leaving three tergites exposed, apices separately rounded, indefinitely truncate; pubescence fine, pale and sparse, but more conspicuous than on head and pronotum. *Ventral surface* shining, finely and sparsely punctulate and pubescent. Second protarsal segment projecting in a free lobe over the third, with its tip narrowly black. Length 1.5 mm.

Female from the type locality unknown.

Holotype, male, labeled "Sabinas Hidalgo, N. L., Mex. 49: 8/9/42. Grassland, overgrazed. M1598."

Six paratypes, one male with the same data as the holotype; two males and three females, labeled "Catalina Springs, Arizona. 15-4. Hubbard-Schwarz Collection. Roots of Riddellia." Holotype and four paratypes in the U. S. National Museum; two paratypes in the author's collection.

The male paratype from Nuevo Leon is identical with the holotype, except that one antenna and one elytron are missing. One of the males from Catalina Springs, with only the antennae missing, appears to be identical with the holotype, except for darker coloration. The parts that are testaceous in the holotype are piceous in the paratype and the parts that are ivory white in the holotype are testaceous in the paratype. Certain minor differences in the sculpturation of the head, practically undescribable, appear to be well within the limits of intraspecific variation.

The three female paratypes are all darker than the holotype, two having the ground color piceous, as in the male paratype from the same locality; one with the ground color piceotestaceous. In one the elytra are entirely whitish testaceous, except for a piceous scutellar area. They are all more elongate than the male, have the frons unmodified, antennae shorter, reaching the middle of the elytra, which are short, 1.15 times as long as the prothorax and squarely truncate, leaving six tergites exposed.

The males of this species can be easily separated from the same sex of *A. submarginatus* by the characteristic frontal excavations, the wider head, the shorter less pubescent antennae, with the peculiar deformity of the third antennal segment, and the parallel elytra. The females can be separated from those of *A. submarginatus* by the short, parallel elytra, which are squarely truncate at the apex and leave six tergites exposed, whereas the elytra in the females of *A. submarginatus* are much longer, leaving only three tergites exposed, and are definitely widened at the apex and evenly rounded.

TANAOPS Leconte

Tanaops rostratus (Horn), **new combination**

Attalus rostratus Horn, Trans. American Ent. Soc., 4:121. Fall, ibid., 43:87. Marshall, Proc. California Acad. Sci., 4th series, 27:116.

Tanaops neglectus Marshall, Canadian Ent., 78:185. **(new synonymy)**

One problem which has puzzled students of the Malachiidae for many years is the proper identification of Horn's species, *Attalus rostratus,*

described by him in 1872 from a single female specimen. Fall (1917) stated that it was more than likely that this species would prove to be a *Tanaops* when the male was discovered and surmised that it might be his *T. angusticeps.* In 1946 I described *Tanaops neglectus,* from a series of two males and seven females, giving the distinguishing characters which separate it from *T. angusticeps,* to which it is most closely related; but did not discover until later that my collection contained two female specimens of this species under the name *Attalus rostratus,* a fact which I reported in 1951, when reviewing the genus *Attalus,* mentioning also that I had seen a female specimen of *T. neglectus,* identified by F. Blanchard as *A. rostratus.*

Recently I sent a female of *T. neglectus* to the Philadelphia Academy of Natural Sciences, for comparison with Horn's type of *A. rostratus* and Mr. Harold J. Grant, Jr., the Assistant Curator of Entomology, who kindly made the comparison, informs me that, in his opinion, the two specimens are conspecific. The only difference between the two worth mentioning, according to Mr. Grant, is that the prothorax of Horn's type is rufous, whereas that of the specimen of *T. neglectus* is black, with the posterior angles rufous. The color of the prothorax is notoriously variable in *Tanaops,* several of the species occurring with either black or rufous prothorax, or various combinations of black and rufous.

Tanaops lobulatus, new species

Male. Oblong, parallel, elytra slightly widened posteriorly. Piceous black, ventral surface of first two antenal segments, distal half of clypeus, genae, base of mandibles, mouth parts (except palpi), pronotum (except pronotal discal spot), elytral apices and margins (except basal), pro- and mesocoxae, all the trochanters and all the abdominal sternites testaceous. *Head* moderately elongate, 1.2 times longer than wide, biimpressed between the eyes; surface shining, punctures and pubescence extremely fine. *Antennae* moderately long, passing the pronotum by almost three segments, feebly serrate, pubescent, the intermediate segments not sinuate. *Pronotum* quardate, 1.1 times wider than long, all the angles broadly rounded, the posterior slightly flattened, the sides parallel, the anterior margin feebly produced; a piceous pronotal discal spot, extending from just behind the anterior margin seven-eighths the distance to the posterior margin and from the center two-thirds the distance to the lateral margins. The anterior and lateral borders of the spot are irregularly crenulate; the posterior border is produced into three lobes, the median lobe about twice as long as the lateral lobes. Surface of pronotum glabrous, shining, no punctures or pubescence visible. *Elytra* black, shining at the base, becoming gradually duller toward the apex; surface minutely, transversely rugulose, punctures and pale pubescence very fine and dense, the erect black setae numerous and evenly distributed, apices broadly pale, posterior half of sutural margins more narrowly pale, lateral margins very narrowly pale, with a dilation of the pale margins just anterior

to the middle. *Ventral surface* and legs finely and densely punctured and pubescent, the tarsi slightly paler. Abdominal pits moderate in size, narrowly coalescent, those on the fifth sternite larger. Length 3.0 mm.

Female. Similar to the male except as follows. The clypeus and anterior part of the front, to the anterior ocular margins, are pale. The front is more deeply impressed, the impression ending posteriorly in a sharp, arcuate line at the midocular level, the area immediately anterior to this line more coarsely punctured. Antennae shorter, scarcely serrate. Discal pronotal spot narrower, but posteriorly lobulate as in the male. Posterior coxae piceotestaceous, all the abdominal sternites piceous black, with the posterior margins very narrowly pale. Abdominal sternites and protarsi simple. Length 3.5 mm.

Holotype, male and allotype, female, "7 mi. west of Westgard Pass, Inyo Co., Calif. J. W. MacSwain, collector. VI-24-53." Three paratypes, one male and one female same data; one female same locality but collected by W. D. McLellan, VI-26-53. Holotype and allotype in the collection of the University of California, at Berkeley, California, paratypes in the author's collection.

The male paratype shows no difference from the holotype worth mentioning, except that the discal pronotal spot is somewhat narrower, as in the allotype. Both female paratypes have the front biimpressed, as in the holotype. In one the first three abdominal segments are pale in the central portion and in the other the dilation of the lateral elytral pale margins is more feeble than in the other four specimens.

This species runs to couplet "OO" in my 1946 key to the genus *Tanaops,* which couplet contains *T. sierrae* Marshall and *T. nunenmacheri* Marshall. It differs from both species in having the abdomen pale in the male, black in the female; in *T. sierrae* the abdomen is pale in both sexes and in *T. nunenmacheri* it is black in both sexes. Further, the antennae are much more feebly serrate than in either of the above species, or in any of the related species. The pronotum in both *T. sierrae* and *T. nunenmacheri* is usually black, but it may be black with the basal angles pale, or pale with or without a dark discal stripe, but not with the clearly lobulated discal spot of the present species. *Lobulatus* resembles *T. nunenmacheri* more closely than any other species and, in fact, the female collected by Mr. McLellan has been in my cabinet for some time, identified as *T. nunenmacheri.* The error was not apparent until I examined the series of four specimens collected by Mr. MacSwain.

PSEUDEBAEUS Horn

Pseudebaeus bicolor LeConte

A series of six specimens of this species, all males, collected by Dr. M. H. Hatch in Oregon and Washington, show a variation which should be recorded, as it is apt to cause difficulty in identification.

The variation consists of the presence of a blackish piceous spot or stripe, occupying about the central third of the pronotal disc, which is uniformly pale in typical specimens. This spot is wider toward the posterior end and in one is enlarged so as to cover the greater part of the pronotum. Almost surely specimens will eventually be found in which the entire pronotum is piceous in color.

Consideration might be given to designating this form as a subspecies, except that typical specimens of *P. bicolor* have been reported from California, Oregon and British Columbia (Marshall, 1951) and presumably occur also in Washington. Also, a reexamination of the eastern specimens in my series of *P. bicolor* shows a definite tendency to this variation in many of the specimens.

ATTALUS Erichson

Attalus humeralis LeConte

Attalus pettiti Horn **(new synonymy)**

Observations on these two species were recorded in 1951, pp. 107 and 108, and in 1953, p. 828. The Brownsville, Texas specimens mentioned in 1951, under *A. humeralis,* were incorrectly identified and the differences noted between the two species, under *A. pettiti,* were based on that misidentification. In 1953, the discovery of intermediate specimens of *A. pettiti,* from Ohio and Illinois, with reduced apical spots on the elytra, and some in which the apical spots were entirely absent, convinced me of the correctness of the above synonymy, but I refrained from describing the Brownsville specimens as new, due to the lack of an opportunity at that time to study LeConte's type of *A. humeralis.*

Recently I sent two specimens to Dr. P. J. Darlington, Jr., at the Museum of Comparative Zoology, one from Illinois, agreeing with typical *A. pettiti* in every respect, except that the apical spots were wanting, and one of the Brownsville specimens. Dr. Darlington kindly compared these with LeConte's type of *A. humeralis* and he informs me that the Illinois specimen corresponds with that type. The Brownsville species is herewith described as *Attalus scapularis.*

Attalus scapularis, new species

(Figure 5)

Male. Oblong-oval, elytra rather strongly widened and rounded posteriorly, beginning at anterior third, convex. Color rufotestaceous, paler at junction of anterior and middle thirds of elytra, which are faintly transversely impressed at this point; faintly washed with piceous on disc of posterior third of elytra; a small humeral spot, antennae (except three basal segments), tips of mandibles, terminal segment of maxillary palpi, tips of femora, tibiae and tarsi piceous. *Head* broad, 1.3 times wider than long, an ill-defined piceous spot at center of front, a row of about eight long, black setae at posterior third of clypeus; surface shining, punctures and

pubescence barely visible. *Antennae* of medium length, passing pronotum by about two segments, feebly serrate, rather densely pubescent. *Prothorax* transversely oval, 1.2 times wider than long, strongly convex, all margins and angles broadly rounded, anterior portion of disc faintly washed with piceous; surface shining, punctures and pubescence as on head. *Elytra* densely and rather coarsely punctured, punctures (in middle third) separated by not more than their diameters; somewhat dull; pubescence pale, short, dense, uniform, semierect, no erect black setae present; a faint carina from the humeral umbo parallel to lateral elytral margin, about half-way to the tip. *Ventral surface* and legs finely and sparsely punctulate and pubescent, the legs more densely so. Lobes of second protarsal segments parallel, as wide as the segment, reach about the tip of third segment, are piceotestaceous in color, with a very narrow black edge. Pygidium large for the genus, hirsute, triangular, the apex narrowly truncate, entire. Length 2.5 mm.

Female. Paler than male, the central third of elytra being almost a sulphur yellow. Elytra more shining, the pubescence inconspicuous (probably abraded). Antennae almost as strongly serrate as in male. Two abdominal tergites exposed; pygidium with a deep, narrow apical notch, last sternite with a minute apical notch and a small semicircular depression at the base. Length 3.0 mm.

Holotype, male, "Brownsville, Tex. VIII-8-37. D. J. and J. N. Knull collectors" and allotype, female, "Brownsville, Texas, V-26-03," no collector's label. One male paratype, same data as holotype, except collected on V-31-39. Holotype in the collection of Ohio State University, allotype and paratype in the author's collection.

The male paratype is slightly darker than the holotype, the pale transverse elytral depression at the basal third showing as a poorly defined fascia. No other differences are noted.

This species resembles typical *A. humeralis* closely as to color and runs to this species in my 1951 key to the species of *Attalus*. It is however, more oval, with the elytra less shining and much more densely and coarsely punctate. It can be easily separated by the pygidium, which is entire in the male, deeply and narrowly emarginate in the female, as in *A. tucsonensis* Marshall, while in *A. humeralis* (Figure 6) the pygidium has a small triangular apical notch in both sexes.

Attalus limonis Marshall

This species was described in 1951, from Tamaulipas, Mexico and has been recently collected, by Dr. Mont A. Cazier, in Jim Wells County, Texas. This locality is in southern Texas, less than 100 miles north of Brownsville, across the Rio Grande from Tamaulipas, so that its occurrence in our territory was rather to be expected. It will probably be found in other collections, mixed with *A. rufiventris* Horn, which it superficially resembles. It should be added to our lists.

Attalus bicolor Marshall

The unique male type of this species, recently described (1953), was

labeled merely "Texas." Three females of the species, collected by Dr. J. N. Knull at Corpus Christi, Texas, not only fix its locality more definitely, but permit the designation and description of the allotype.

Female. Similar to the male, except as follows. Elytra rather strongly dilated posteriorly; antennae shorter and very feebly serrate; head piceous black as far forward as the center of the eyes; prothoracic discal spot forming a uniform central stripe reaching from the apical almost to the basal margin; all the legs piceotestaceous, the posterior femora with a dorsal piceous stripe; posterior margins of abdominal segments narrowly pale; apex of pygidium with the same small notch seen in the male. The parts which are clear yellow in the male type are testaceous to piceotestaceous in the female, so that the contrast between these and the black elytra is less pronounced and the specific name less appropriate. Length 2.5 mm.

Allotype, female, "Corpus Christi Lk., Tex., III-28-52. D. J. and J. N. Knull collectors," in the collection of Ohio State University. Two parallotypes, same data, except one collected III-17-52, one in the collection of Ohio State University and one in the author's collection.

The parallotypes do not show any variation of consequence, except that the dorsal pronotal stripe is wider than in the allotype.

Attalus mcclayi, new species

(Figure 7)

Male. Elongate oval, the elytra gradually and moderately widened posteriorly, from just behind the humeri. Black, elytra faintly iridescent; entire prothorax, inferior surface of first three antennal segments, under surface of head, mouth parts (except palpi and mandibles), ventral surface, including coxae, trochanters and anterior femora, testaceous; antennae, tibiae, tarsi and center of metasternum piceous; middle femora with the upper surface piceous, the lower surface testaceous; posterior femora piceous, with the proximal ends testaceous. *Head* moderately elongate, 1.2 times longer than wide, surface rather dull, faintly impressed between the eyes, punctures not evident, pubescence fine, pale, sparse, a few erect black setae on the tempora. *Antennae* moderately long, passing posterior border of prothorax by three segments (from paratype; antennae defective in holotype), feebly serrate and finely pubescent. *Prothorax* subquadrate, 1.1 times wider than long, sides parallel, the anterior margin slightly produced, all the angles broadly rounded, the posterior slightly impressed; surface faintly shining, punctures and pubescence not evident, numerous erect black setae scattered over entire surface. *Elytra* shining, surface slightly rugulose, punctures dense, extremely minute, pubescence short, white, dense, the erect setae numerous and evenly distributed. *Ventral surface* moderately shining, punctures and pubescence about as on the elytra, very fine and dense. Legs long and slender. Terminal abdominal segment consists of a pair of black, heavy hooklike processes, round to oval in cross section, turned mediad at right angles at about the center of their length and reach less than half the distance to the tip of the pygidium, which is long narrow, strongly concave from side to side ventrally, with the apex squarely truncate. (Fig. 7) The lobes of the second protarsal segments are elongate, slightly spatulate, narrowly bordered with black and cover about two-thirds of the third segments. Length 3.0 mm.

Female. Similar to the male, except as follows. Slightly broader in proportion to length; antennae more feebly serrate; entire metasternum and terminal sternite piceous black, the latter evenly convex and hirsute; pygidium rounded at the tip. Length 3.5 mm.

Holotype, male and allotype, female, "Glenwood, New Mexico, VI-22-47. A. T. McClay, collector," temporarily in the author's collection, but to be returned eventually to the University of California. Paratypes in the author's collection and in that of the University of California.

Described from a series of nine specimens, two males, seven females, all with the same data. The single male paratype shows no variation worthy of note, but the abdomen has become so distorted in drying that the structures are not visible. The lateral portions of the metasternum, rather than the central portion, are piceous. The female paratypes are likewise in rather poor condition. They differ from the allotype mainly in showing more piceous coloration of the ventral surface. In all of them the mesosternal side pieces are more or less piceous, as well as the penultimate or fifth sternite and in some this coloration partially involves also the fourth sternite. The pronotum is uniformly testaceous in all paratypes, as in the types, but in some the black head is faintly visible through the translucent pronotum, giving a false impression of a transverse apical spot.

The species superfically resembles *Tanaops mimus* Fall, but may be distinguished at once by the generic characters in the male. In my 1951 key to the genus *Attalus,* it runs to *nigripes* Horn, to which it is most nearly related, except that the abdomen is not entirely black in the female. The male is easily separated from the same sex of *A. nigripes* (Figure 8) by the heavy hooklike processes which make up the sixth sternite and which, so far as my experience goes, are unique in the family. These processes in the male of *A. nigripes* are pale yellow, flattened and triangular in outline, with only the extreme tips slightly directed mediad and the inner margin of each process slightly concave. The male of *nigripes* also has the pygidium very broad at the base and is almost semicircularly rounded, with a very small notch or emargination at the apex.

The species is named in honor of its discoverer, Mr. A. T. McClay, of the University of California.

PSEUDATTALUS Champion

Pseudattalus texensis, new species

Female. Ovoid, broadly widened posteriorly. Black, the head, antennae, prothorax, anterior two pairs of coxae, trochanters and legs testaceous. *Head* small, slightly narrower than the pronotum, 1.3 times wider than long, the occiput and labrum

piceotestaceous, front unimpressed, surface glabrous, shining, no pubescence visible except on the labrum. *Antennae* 9-segmented, not appreciably serrate, short, reaching to about the posterior third of the pronotum, very finely pubescent. *Pronotum* transversely oval, 1.3 times wider than long, all the angles broadly rounded; surface shining, glabrous, pubescence extremely fine and visible only in an oblique light. *Elytra* strongly widened posteriorly, nine-tenths as wide as long, the apices separately rounded, exposing the pygidium and a portion of the propygidium; surface shining, the punctures extremely fine, rather sparse, pubescence a pale golden yellow, thin but rather long and semierect, conspicuous when viewed obliquely; no erect black setae present. *Ventral surface* piceous black, very finely and rather sparsely punctured and pubescent; terminal sternite broad, short, depressed in the center, Pygidium much wider than long, the apex evenly rounded. Posterior tibiae slightly arcuate, with a long, straight apical spur, which about reaches the end of the first tarsal segment. The left tarsus in the holotype is deformed (it has evidently been broken off and an attempt made at regeneration); the spur is smaller than on the right, but still plainly visible. Length 1.1 mm.

Male unknown.

Holotype, female, "Hidalgo Co., Texas. III-26-54. D. J. and J. N. Knull, collectors," in the collection of Ohio State University. One female paratype, same data, except collected V-28-51, in the author's collection.

The paratype shows no noteworthy variation from the type, except that the front is faintly and transversely impressed and the pubescence on the head just visible. The pygidium is slightly truncate at the apex and the metasternal side pieces are piceotestaceous in color. The tibial spurs are not visible, due to the way the insect is mounted.

The genus *Pseudattalus* has been previously reported from Guatemala, Panama and Colombia. My collection contains one male and four females of *P. armatus* Champion, from Vera Cruz, Mexico. The present species agrees with *P. armatus* in the presence of the posterior tibial spurs in the female, which are absent in the other two species, *P. minimus* Erichson and *P. punctatus* Gorham. These are all minute insects which strongly resemble our *Attalus granularis* Erichson, but which are separated at once by their 9-segmented antennae, a very rare character in the Malachiidae. *P. armatus* differs from the present species in being uniformly black throughout.

The following distributional records are supplementary to those contained in Leng's Catalogue (1920) and Supplements and Nos. III, IV and V (1951, 1953, 1954) of the present series of Studies and Champion's paper (1914) on the Mexican Species.

Collops parvus Schffr., California; *C. punctatus* Lec., Chihuahua, Mex.; *C. dux* Fall, Nyarit, Mex.; *C. flavicinctus* Fall, California, Utah; *C. vittatus* Say, Idaho, Tamaulipas and Nuevo Leon, Mex.; *C. punctulatus* Lec., Guanajuato, Mex.; *C. insulatus* Lec., Chihuahua, Mex.; *C.*

texanus Schffr., Chihuahua and Sonora, Mex.; *C. tibialis* Schffr., Chihuahua and Aguascalientes, Mex.; *C. balteatus* Lec., Arkansas; *C. blandus* Er., Nyarit and Colima, Mex., *C. paradoxus* Champ., Michoacan, Mex.; *Tanaops complex* Fall, Chihuahua, Mex.; *T. sierrae* Marshall, Idaho; *T. nunenmacheri* Marshall, Idaho; *Anthocomus biguttulus* Horn, New Mexico, North Dakota; *A. falli* Marshall, Idaho; *Attalus zebriacus* Blatch., Maryland; *A. rusticus* Fall, Chihuahua, Mex.; *A. marginipennis* Blatch., Texas; *A difficilis,* Lec., Texas, Sinaloa, Mex.; *A. nigripes* Horn, North Dakota, *A. scincetus* Say, D. F., Mex.; *A. dilutimargo* Fall, Texas; *A. sapphirinus* Gorh., Fla.

Literature Cited

Cazier, Mont A. 1954. A Review of the Mexican Tiger Beetles of the Genus Cicindela. Bull. American Mus. of Nat. Hist., 10, (article 3) : 231-309.

Champion, G. C. 1914. Revision of the Mexican and Central American Malachiidae and Melyridae. Trans. Entom. Soc. of London, pp. 13-127.

Fall, H. C. 1917. Short Studies in the Malachiidae. Trans. Amer. Ent. Soc., 43 :67-88.

Horn, G. H. 1872. Synopsis of the Malachiidae of the United States. Trans. American Ent. Soc., 4 :109-127.

LeConte, J. L. 1852. Catalogue of the Melyrides of the United States. Proc. Acad. Nat. Sci. Philadelphia, 6 :163-171.

Leng, C. W. 1918. Notes on Some Changes in List of Coleoptera. Jour. New York Ent. Soc., 26 :201-211.

1920. Catalogue of the Coleoptera of America, north of Mexico. John D. Sherman, Jr., Mt. Vernon, N. Y.

Marshall, M. Y. 1946. Studies in the Malachiidae. Canadian Entom., 78 :183-195.

1948. Studies in the Malachiidae II. Ent. America., 26, 4 :113-144.

1951. Studies in the Malachiidae III. Proc. California Acad. of Sciences. (4th series), 27, 4 :77-132.

1952. The Malachiidae of North Central Mexico. American Mus. Novitates, No. 1584.

1953. Studies in the Malachiidae IV. American Midl. Nat., 49, 3 : 825-831.

1954. Studies in the Malachiidae V. Bull. Brooklyn Ent. Soc., 49, 3 :66-80.

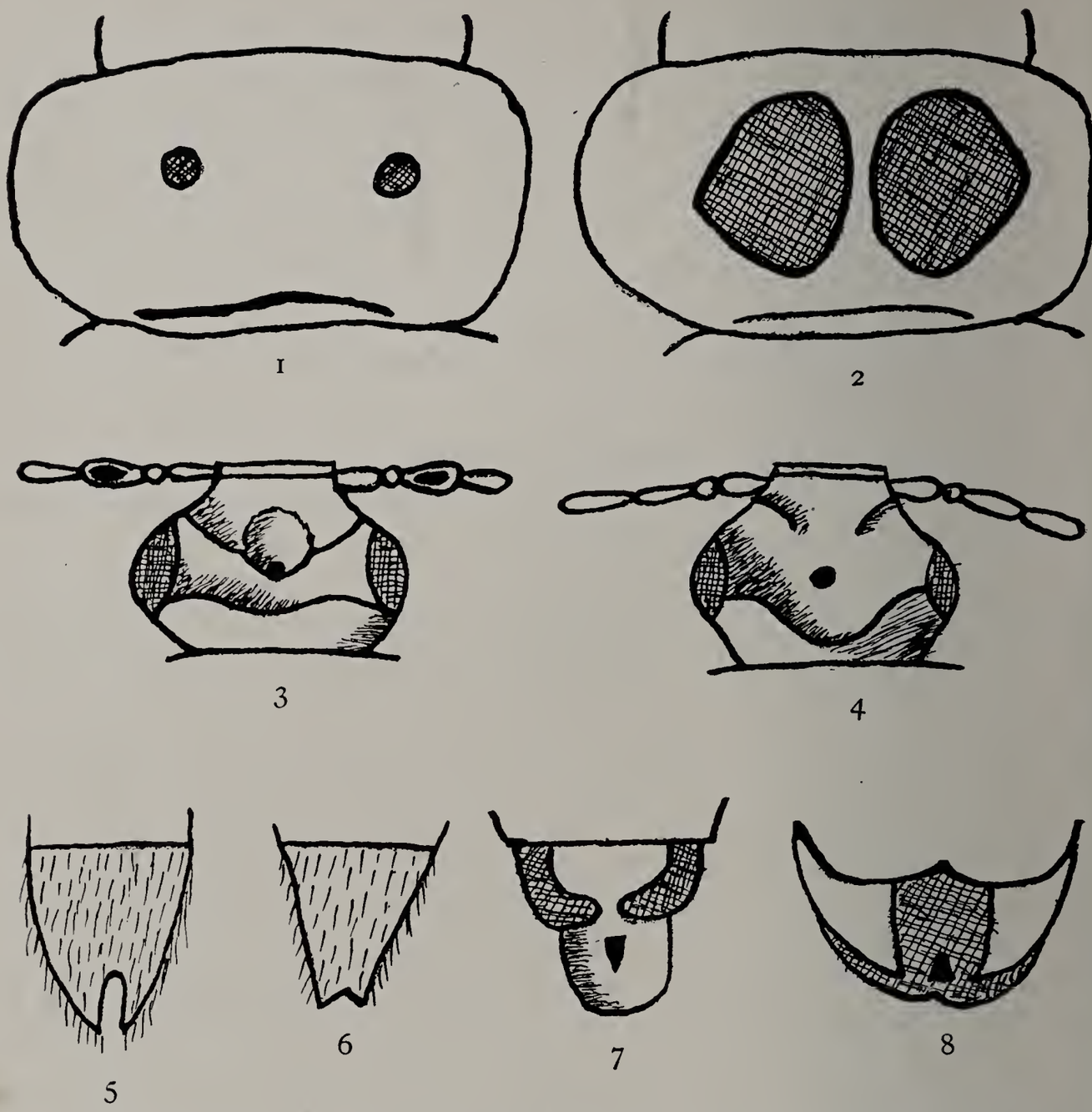

Fig. 1. Pronotum of *Collops bipunctatus* (Say). Fig. 2. Pronotum of *C. bipunctatus australis* n. subsp. Fig. 3. Head and first four antennal segments of *Attalusinus mexicanus* n. sp., Male. Fig. 4. Head and first four antennal segments of *Attalusinus submarginatus* (Lec.), male. Fig. 5. Pygidium of *Attalus scapularis* n. sp., female. Fig. 6. Pygidium of *A. humeralis* (Lec.), female. Fig. 7. Terminal sternite of *Attalus mcclayi* n. sp., male. Fig. 8. Terminal sternite of *Attalus nigripes* Horn, male.